NSLS OHSAS Job Risk Assessment

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Name(s) of Risk Team Members: J. Aloi, S. Bennett, W. Caliebe, G. Camarda, R. Greene, A. Lenhard and S. Wirick.	**Point Value → Parameter ↓**	**1**	**2**	**3**	**4**	**5**
Job Title: **Work with laboratory chemicals** **Job Number or Job Identifier:** **LS-JRA-0020**	**Frequency (B)**	**≤once/year**	**≤once/month**	**≤once/week**	**≤once/shift**	**>once/shift**
Job Description: Working with hazardous chemicals in the following hazard classes: Carcinogens, Highly Acute Toxin, Reproductive Toxins, Corrosives, Strong Oxidizers, Highly Reactive Materials, Peroxide forming chemicals, Pyrophoric Materials, Flammables/Combustible Materials and working with sharps	**Severity (C)**	**First Aid Only**	**Medical Treatment**	**Lost Time**	**Partial Disability**	**Death or Permanent Disability**
Training and Procedure List (Optional): Laboratory Standard Approved by: W. R. Casey Date:8/25/05 Rev. #: 1 Revision Log	**Likelihood (D)**	**Extremely Unlikely** <<1x/20yrs	**Unlikely** 1x/10-20yrs	**Possible** >1x/10-20yrs	**Probable** 1x/yr	**Multiple** >1x/yr
Stressors (if applicable, please list all):		**Reason for Revision (if applicable):**			**Comments:**	

		Before Controls							**After Initial Controls**						**After Additional Controls**					
Job Step / Task	**Hazard**	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**Initial Controls**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**Control(s) Added to Reduce Risk**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**% Risk Reduction**
Storing containers of hazardous materials	**SPILL**: due to container failure may result in explosion or fire from flammable/combustible materials coming in contact with an ignition source or chemical reaction	N	1	4	4	5	80	Segregation of incompatibles, chemical storage cabinets, PPE, work planning/experimental review, ventilation, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, shelf-	1	4	3	2	24							

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								life monitoring, containers specific for the hazard and operation, training, applicable subject areas											
	SPILL: due to container failure may result in exposure to toxic materials or corrosive splash	N	1	4	4	5	80	chemical storage cabinets, work planning/experimental review, ventilation, secondary containment, use of safer substitutes, Tier 1 inspections, container labeling, area posting, shelf-life monitoring, containers specific for the hazard and operation, training, applicable subject areas, PPE	1	4	3	2	24						
	Reaction: Chemical reaction of hazardous materials stored in a refrigerator during a power failure	N	1	1	4	3	12	Emergency power generator, work planning/experimental review, use of safer substitutes, Tier 1 inspections, container labeling, area posting, shelf-life monitoring, containers specific for the hazard and operation, training, applicable subject areas, PPE, secondary containment	1	1	3	2	6						
Moving containers within the department	**SPILL**: due to dropping container may result in explosion or fire from flammable/combustible materials coming in contact with an ignition source	N	1	4	4	5	80	work planning/experimental review, spill response, Tier 1 inspections, container labeling, containers specific for the hazard and operation, training, applicable subject areas, secondary containment	1	4	3	3	36						
	SPILL: due to dropping container may result in exposure to toxic materials or corrosive splash	N	1	4	4	5	80	work planning/experimental review, PPE, spill response, Tier 1 inspections, container labeling, containers specific	1	4	3	3	36						

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								for the hazard and operation, training, applicable subject areas, secondary containment												
Measuring chemicals-pipeting, preparing sample cells, etc.	**SPILL**: due to dropping container may result in explosion or fire from flammable/combustible materials coming in contact with an ignition source	N	1	4	4	5	80	spill pads, work planning/experimental review, PPE, use of small volumes, fume hood, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, containers specific for the hazard and operation, applicable subject areas	1	4	3	3	36							
	SPILL: due to dropping container may result in exposure to toxic materials or corrosive splash	N	1	4	4	5	80	spill pads, work planning/experimental review, PPE, use of small volumes, fume hood, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, containers specific for the hazard and operation, applicable subject areas	1	4	3	3	36							
	GENERAL USE: Exposure to toxic materials including inhalation, absorption, ingestion and injection	N	1	4	4	5	80	work planning/experimental review, PPE, use of small volumes, fume hood, use of safer substitutes, container labeling, area posting, applicable subject areas, area and/or personnel monitoring	1	4	2	3	24							
Mixing and reacting	**SPILL**: due to dropping container may result in explosion or fire from	N	1	4	4	5	80	spill pads, work planning/experimental review, PPE, use of small	1	4	3	3	36							

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hazardous materials	flammable/combustible materials coming in contact with an ignition source							volumes, fume hood, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, containers specific for the hazard and operation, applicable subject areas, secondary containment												
	SPILL: due to dropping container may result in exposure to toxic materials or corrosive splash	N	1	4	4	5	80	spill pads, work planning/experimental review, PPE, use of small volumes, fume hood, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, containers specific for the hazard and operation, applicable subject areas	1	4	3	3	36							
	General Use: Exposure to toxic materials including inhalation, absorption, ingestion and injection	N	1	4	4	5	80	work planning/experimental review, PPE, use of small volumes, fume hood, use of safer substitutes, container labeling, area posting, applicable subject areas, area and/or personnel monitoring	1	4	2	3	24							
	Exothermic reaction	N	1	4	4	5	80	work planning/experimental review, PPE, use of small volumes, use of safer substitutes, container labeling, area posting, reactions vessels specific for the hazard, applicable subject areas	1	4	4	3	48							

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Working with peroxide forming compounds	Rupture of container, exposure to vapors, explosion	N	1	2	4	5	40	Periodic testing as per SBMS, CMS, work planning/experimental review, PPE, use of small volumes, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, containers specific for the hazard and operation, applicable subject areas	1	2	4	2	16							
Working with pyrophoric compounds	Rupture of container, exposure to vapors, dust, mists, fire resulting from loss of inerting atmosphere	N	1	2	4	5	40	Applicable subject areas, work planning/experimental review, PPE, use of small volumes, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, containers specific for the hazard and operation	1	2	3	3	18							
Working with sensitizers, acute toxins, carcinogens & reproductive toxins	Exposure to vapors, dust, mists, fumes, fire	N	1	3	4	5	60	Applicable subject areas, work planning/experimental review, PPE, area monitoring, personnel monitoring, use of small volumes, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, containers specific for the hazard and operation, fume hood	1	3	4	3	36							
Working with flammables and combustible materials	Exposure to vapors, dust, mists, fumes, fire	N	1	3	4	5	60	Applicable subject areas, work planning/experimental review, PPE, area monitoring, personnel monitoring, use of small volumes, secondary	1	3	3	3	27							

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								containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, containers specific for the hazard and operation, fume hood											
Working with corrosives, strong oxidizers, highly reactive materials	Exposure to vapors, dust, mists, fumes, fire	N	1	3	4	5	60	applicable subject areas, work planning/experimental review, PPE, area monitoring, personnel monitoring, use of small volumes, secondary containment, spill response, use of safer substitutes, Tier 1 inspections, container labeling, area posting, containers specific for the hazard and operation, fume hood	1	3	3	3	27							
Use of sharps	Cuts, puncture wounds, exposure to infectious and hazardous materials	N	1	4	2	3	24	Sharp containers, area posting, tier I, applicable subject areas, work planning/experimental review	1	4	2	2	16							
Material handling - manual	See **LS-JRA-0018**																			
Material handling - mechanical	See **LS-JRA-0019**																			

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Transporting of chemicals	See **LS-JRA-0022**																			

***Risk:**	**0 to 20 Negligible**	**21 to 40 Acceptable**	**41-60 Moderate**	**61 to 80 Substantial**	**81 or greater Intolerable**